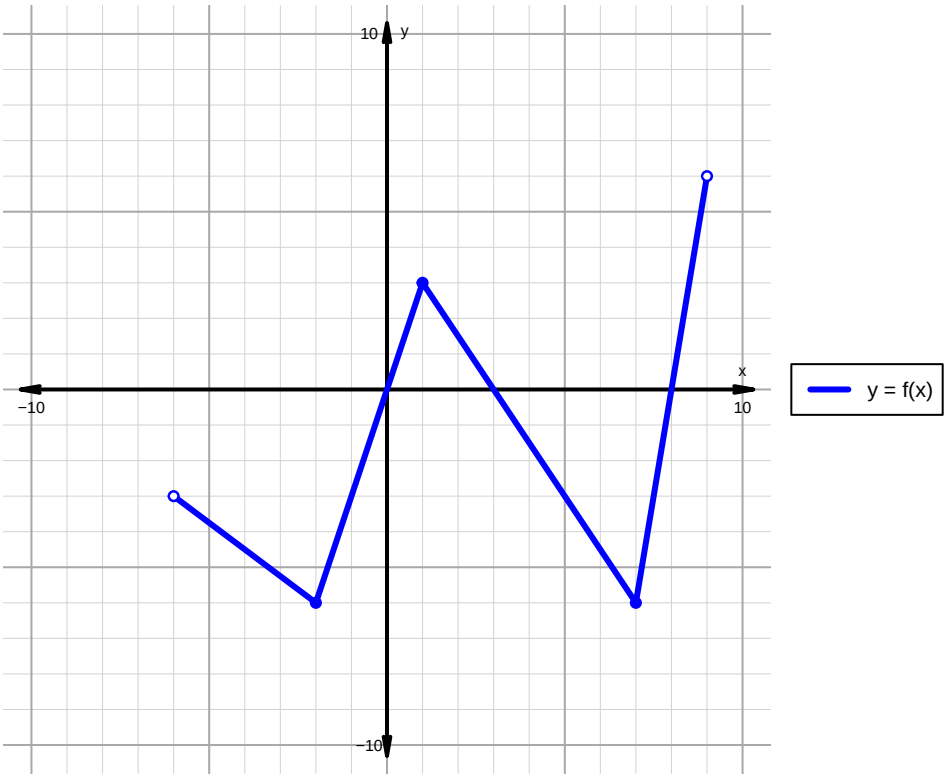
Name: Date:

Intervals, Transformations, and Slope Solution (version 112)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(0, 3) \cup (8, 9)$
Negative	$(-6, 0) \cup (3, 8)$
Increasing	$(-2, 1) \cup (7, 9)$
Decreasing	$(-6, -2) \cup (1, 7)$
Domain	$(-6, 9)$
Range	$(-6, 6)$

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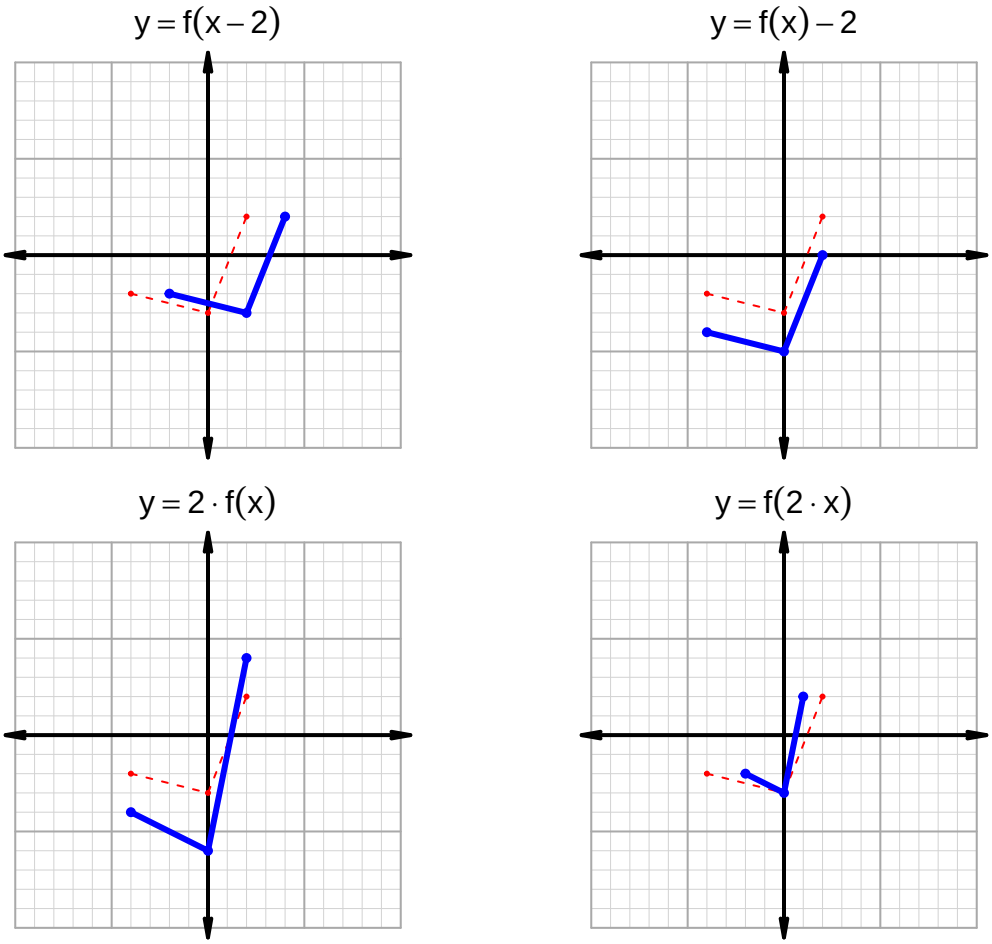
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 38$ and $x_2 = 65$. Express your answer as a reduced fraction.

x	$g(x)$
27	65
38	27
48	38
65	48

$\frac{f(65)-f(38)}{65-38} = \frac{48-27}{65-38} = \frac{21}{27}$

The greatest common factor of 21 and 27 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{7}{9}$$